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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,803	06/13/2005	Yoshitaka Sakaue	2005_0966A	8801

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WASHINGTON, DC 20006

EXAMINER

VERDERAME, ANNA L

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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10/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,803	Applicant(s) SAKAUE ET AL.	
	Examiner ANNA L. VERDERAME	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on 07/25/2008 has been carefully considered. A response is presented below. Support for the amendment of claim 4 is found on page 13 of the applicant's specification.

Drawings

1. The drawings were received on 07/25/2008. These drawings are accepted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Uno et al. US 6,449,239 in view of Ishimaru et al. US 2002/0006580.

Uno et al. teaches an optical recording medium as shown in figure 8 wherein a polycarbonate resin substrate 100 is coated with ZnS-SiO₂ protective layers 102,106,202, and 206, Ge-Cr-N interface layers 103,105,203,and 205, and Ag-Pd-Cu alloy for reflective layers 107 and 207, TiO₂ for thermal diffusion layer 108 and Ge₄Sb₂Te₇ for both recording layers 104 and 204(17/28-43). The TiO₂ heat dissipation layer had a thickness of 40 nm(17/41). The separating layer 109 may be formed of a material which enables optical absorbance with respect to the laser beam used for

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recording and reproduction to be as low as possible. As such a material SiO_2 is acceptable(11/54). Transmittance adjustment function of the TiO_2 thermal diffusion layer is disclosed at (9/60-10/52). A 30 nm thermal diffusion layer is disclosed at (17/3). Other materials disclosed for use as the material of the separating layer include organic resins, inorganic dielectrics such as SiO_2 , Al_2O_3 , ZnS , or the like or a glass material may be used(11/50-55). These materials must exhibit minimal optical absorbance with respect to the laser beam used for recording and reproducing.

Thickness of the separating layer is disclosed to be at least 1.2 micrometers(12/4).

In the embodiment, as shown in figure 8, dielectric layer 106 corresponds to applicant's first dielectric layer. Protective layer 106 is formed between the substrate 100 and recording layer 204(corresponding to applicant's first recording layer). TiO_2 thermal diffusion layer corresponds to applicant's second dielectric layer. The TiO_2 layer is formed between the first dielectric layer 106 and the first recording layer 204. Recording layer 104 corresponds to applicant's second recording layer.

Ishimaru et al. teaches inorganic dielectric materials for use in optical recording media as protective layers are disclosed. Among those listed are Al_2O_3 , ZnS , SiO_2 and Nb_2O_5 (0040).

It would have been obvious to one of ordinary skill in the art to modify the optical recording medium shown in figure 8 of Uno et al. by forming the thermal diffusion layer 108 of TiO_2 and forming the protective layer 106 of an inorganic dielectric material such as Nb_2O_5 based on the disclosure by Uno et al. to use inorganic dielectric materials

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such as SiO_2 , Al_2O_3 , ZnS , or the like as the material of the optical separation layer and based on the disclosure of Nb_2O_5 as being equivalent to inorganic dielectric materials such as SiO_2 , Al_2O_3 , ZnS by Ishimaru et al. and with the reasonable expectation of forming a functional optical separation layer

Due to applicant's amendment of claim 1 to exclude SiO_2 , the 102(b) rejection of claims 1-8 and 11 has been overcome. It is the position of the examiner that deleted layer 8 is a protective layer made of a UV-curing resin, a dummy substrate, or a second grooved substrate. This assumption is made based on the presence of the reflective layer 4 on the opposite side of the recording layer 6 from layer 8. In order to read the information in the recording layer 6 light must be shone through layer 8. Applicant recites the formation of "other layers" at (0040). The examiner further notes that in a single layer embodiment only one transmittance adjustment layer 3 is present. See (0032).

In this embodiment the transmittance adjustment layer 108 is made of TiO_2 and one of the other dielectric protective layers (102 or 106) between layer 108 and the substrate is made at least partially of Nb_2O_5 in the cited figure of Uno et al. wherein 7 is a thermal diffusion layer (can be made of TiO_2 and protective layers 2 can be made of SiO_2 with Ishimaru et al. establishing the equivalence of the use of Al_2O_3 , ZnS , SiO_2 and Nb_2O_5 (0040) as dielectric protective layers. The first recording layer is layer (204) and the second recording layer is layer (104)

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4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uno et al. US 6,449,239 in view of Ishimaru et al. 2002/0006580 as applied above and further in view of Ishibashi et al. JP-01-286136.

Uno et al. does not teach the limitations recited in instant claim 9.

Ishibashi et al. teaches a method by which a substrate made of polycarbonate is evacuated in a vacuum chamber to remove water and oxygen from the substrate. Then an SiO_2 protective layer is coated on the substrate. The result of such a process is improved adhesion of the base protective layer and to prevent cracks from generating(abstract).

It would have been obvious to modify the method of forming an optical recording medium like that taught in Uno et al. at (17/28-43) by removing water and oxygen from the polycarbonate substrate 100 by evacuation in a vacuum chamber before forming the first protective layer of Nb_2O_5 in order to improve the adhesion of the protective layer and to prevent cracks from generating as taught in the abstract of Ishibashi et al.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP-2003-013201- Use of a mixed dielectric film of SiO_2 and Nb_2O_5 in a phase change optical recording medium.

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7 Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA L. VERDERAME whose telephone number is (571)272-6420. The examiner can normally be reached on M-F 8A-4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anna L Verderame/
Examiner, Art Unit 1795

/Martin J Angebranndt/
Primary Examiner, Art Unit 1795